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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,603	09/04/2001	Doron Handelman	9999-1	1674

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EXAMINER

CURS, NATHAN M

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/944,603	HANDELMAN, DORON	
	<b>Examiner</b>	<b>Art Unit</b>	
	Nathan Curs	2633	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 July 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 15-25, 31 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 26-30 and 33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/01, 8/03</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Information Disclosure Statement*

1. Due to the large number of references cited by the applicant, it would be helpful to the prosecution of the instant application if a statement of relevance were provided for each cited reference.

### *Election/Restrictions*

2. Claims 15-25, 31 and 32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11 July 2005.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It's not clear if the claim limitation "about zero" includes or excludes zero; and if not, it's not clear what "about zero" is limited to in terms of a non-zero number.

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2633

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 12-14, 29, 30 and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. ("Lee") (US Patent No. 6288808).

Regarding claim 12, Lee discloses an optical packet switching method for switching to an output path optical packets provided at a plurality of bit-rates on a plurality of input paths, the method comprising: balancing the bit-rates of the optical packets with respect to each other up to a bit-rate difference level within a predetermined equalization range so as to obtain optical packets having balanced bit-rates; and switching said optical packets having balanced bit-rates to said output path on a single switched channel wavelength (fig. 4, fig. 5 input group 4 and converted wavelength 4, fig. 6 and col. 4, line 26 to col. 5, line 32, where the plurality of input signals indicates a plurality of bit-rates, and where T indicates a predetermined equalization range).

Regarding claim 13, Lee discloses the method according to claim 12 and wherein each optical packet comprises one of the following: a fixed-length optical packet; and a variable-length optical packet (fig. 5, elements T and T/n and col. 4, lines 26-60).

Regarding claim 14, Lee discloses the method according to claim 12 and wherein said predetermined equalization range is of about zero range (fig. 5, element T applicable to the input signals).

Regarding claim 29, Lee discloses an optical packet switch for switching optical packets provided at a plurality of bit-rates on a plurality of input paths to an output path, the optical packet switch comprising: a bit-rate balancing apparatus operative to balance the bit-rates of the

Art Unit: 2633

optical packets with respect to each other up to a bit-rate difference level within a predetermined equalization range so as to obtain optical packets having balanced bit-rates; and at least one switching node operatively associated with said bit-rate balancing apparatus and operative to switch the optical packets having balanced bit-rates to said output path on a single switched channel wavelength (fig. 4, fig. 5 input group 4 and converted wavelength 4, fig. 6 and col. 4, line 26 to col. 5, line 32, where the plurality of input signals indicates a plurality of bit-rates, and where T indicates a predetermined equalization range).

Regarding claim 30, Lee discloses the optical packet switch according to claim 29 and wherein said bit-rate balancing apparatus comprises: an inherent control unit and an interface unit operatively controlled by the control unit and operative to receive said optical packets provided at a plurality of bit-rates on a plurality of input paths and to employ at least one packet compactor/expander which is operative to compact/expand at least some of said optical packets in order to obtain said optical packets having balanced bit-rates (figs. 4 and 5 and col. 4, lines 26-60).

Regarding claim 33, Lee discloses an optical packet switch for switching an optical packet provided at a first bit-rate, the optical packet switch comprising: a switching/routing control unit; at least one packet compactor/expander operatively controlled by said switching/routing control unit and operative to compact said optical packet provided at the first bit-rate so as to generate a compact optical packet at a second bit-rate, the second bit-rate being greater than the first bit-rate; and at least one switching node operatively associated with said at least one packet compactor/expander and said switching/routing control unit and operative to switch the compact optical packet to an output path associated with a destination (fig. 4, fig. 5 input group 4 and converted wavelength 4, fig. 6 and col. 4, line 26 to col. 5, line 32).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-11 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. ("Lee") (US Patent No. 6288808) in view of Chraplyvy et al. ("Chraplyvy") (US Patent Application Publication No. 2003/0156841).

Regarding claims 1 and 26, Lee discloses an optical packet switching method and optical packet switch for use at a switching node that receives a first optical packet on a first input path and a second optical packet on a second input path, comprising: an inherent switching/routing control unit and at least one switching node operatively controlled by said switching/routing control unit operative for routing a first optical packet and a second optical packet to a destination at separate time slots over a single channel wavelength if the first packet bit-rate and the second packet bit-rate are the same (fig. 4, fig. 5 input group 4 and converted wavelength 4, fig. 6 and col. 4, line 26 to col. 5, line 32). Lee discloses routing signals of a WDM system using wavelength re-assignment combined with TDM to avoid collisions of packets, but does not disclose routing two packets to a destination using different wavelengths if a magnitude of a difference between the first packet bit-rate and the second packet bit-rate exceeds a bit-rate difference threshold. However, Chraplyvy discloses assigning WDM wavelengths of mixed bit-rate WDM signals so that low bit-rate channels with rates under a maximum bit-rate are assigned to WDM wavelengths having poorer SNR past the edges of the pass band, or within the pass band, of the WDM system's optical amplifiers (figs. 4 and 5 and

paragraphs 0019-0022). It would have been obvious to one of ordinary skill in the art at the time of the invention to transmit lower bit-rate signals using WDM edge wavelengths or poor-SNR wavelengths in the system of Lee by increasing the functionality of the WDM-to-TDM conversion modules of Lee to process low bit-rate signals for transmission using edge wavelengths or poor-SNR wavelengths, in order to enable input signals of a different bit rate in the collision-avoidance system of Lee, as well as to provide the advantage of increasing capacity and/or transmission over wavelengths with poor SNR.

Regarding claim 2, the combination of Lee and Chraplyvy discloses the method according to claim 1 and wherein each of said first optical packet and said second optical packet comprises one of the following: a fixed-length optical packet; and a variable-length optical packet (Lee: fig. 5, elements T and T/n and col. 4, lines 26-60).

Regarding claim 3, the combination of Lee and Chraplyvy discloses the method according to claim 1 and also comprising determining said magnitude of a difference between the first bit-rate and the second bit-rate prior to said routing (Chraplyvy: paragraph 0019, as applicable to wavelength assignment in the WDM-to-TDM conversion modules of the combination).

Regarding claim 4, the combination of Lee and Chraplyvy discloses the method according to claim 3, and discloses segregating low bit-rate signals from higher bit-rate signals for wavelength assignment, but does not explicitly disclose that the wavelength assignment involves comparing bit-rate identifiers, the identifiers derived from analyzing header information, to obtain the difference in bit-rates. However, Lee discloses ATM signals (col. 2, lines 62-65). It would have been obvious to one of ordinary skill in the art at the time of the invention that bit-rate information could be derived for each signal by analyzing the inherent ATM cell headers of the ATM signals taught by Lee.

Regarding claim 5, the combination of Lee and Chraplyvy discloses the method according to claim 4 and wherein each of said first bit-rate identifier and said second bit-rate identifier comprises at least one of the following: a source identifier; a label; and an overhead byte (Lee: col. 2, lines 62-65, where ATM cell headers indicate overhead bytes).

Regarding claim 6, the combination of Lee and Chraplyvy discloses the method according to claim 1 and wherein said bit-rate difference threshold is about zero (Chraplyvy: paragraphs 0019-0022, where the low bit-rate signal of Chraplyvy is only required to be different enough from a higher bit rate signal to be able to work in an edge or poor SNR region of the WDM transmission spectrum).

Regarding claims 7 and 27, Lee discloses an optical packet switching method and optical packet switch for use at a switching node that receives a first optical packet on a first input path and a second optical packet on a second input path, comprising: an inherent switching/routing control unit and at least one switching node operatively controlled by said switching/routing control unit operative for routing a first optical packet and a second optical packet to a destination at separate time slots over a single switch (fig. 4, WDM-to-TDM Conversion Module) if the first packet bit-rate and the second packet bit-rate are the same (fig. 4, fig. 5, fig. 6 and col. 4, line 26 to col. 5, line 32). Lee discloses routing signals of a WDM system using wavelength re-assignment combined with TDM to avoid collisions of packets, but does not disclose routing two packets to a destination using different switches if a magnitude of a difference between the first packet bit-rate and the second packet bit-rate exceeds a bit-rate difference threshold. However, Chraplyvy discloses assigning WDM wavelengths of mixed bit-rate WDM signals so that low bit-rate channels with rates under a maximum bit-rate are assigned to WDM wavelengths having poorer SNR past the edges of the pass band, or within the pass band, of the WDM system's optical amplifiers (figs. 4 and 5 and paragraphs 0019-



0022). It would have been obvious to one of ordinary skill in the art at the time of the invention to transmit lower bit-rate signals using WDM edge wavelengths or poor-SNR wavelengths in the system of Lee by using a control unit operative to determine a magnitude of a difference between a first and second bit-rate and using additional, separate WDM-to-TDM conversion modules to process low bit-rate signals for transmission using edge wavelengths or poor-SNR wavelengths, in order to enable input signals of a different bit rate in the collision-avoidance system of Lee, as well as to provide the advantage of increasing capacity and/or transmission over wavelengths with poor SNR.

Regarding claim 8, the combination of Lee and Chraplyvy discloses the method according to claim 7 and wherein each of said first optical packet and said second optical packet comprises one of the following: a fixed-length optical packet; and a variable-length optical packet (Lee: fig. 5, elements T and T/n and col. 4, lines 26-60).

Regarding claims 9 and 28, Lee discloses an optical packet switching method and optical packet switch for use at a switching node that receives a first optical packet on a first input path and a second optical packet on a second input path, comprising: an inherent switching/routing control unit and at least one switching node operatively controlled by said switching/routing control unit for routing a first optical packet and a second optical packet to a destination at separate time slots over a single channel wavelength if the first packet bit-rate and the second packet bit-rate are the same (fig. 4, fig. 5 input group 4 and converted wavelength 4, fig. 6 and col. 4, line 26 to col. 5, line 32). Lee discloses routing signals of a WDM system using wavelength re-assignment combined with TDM to avoid collisions of packets, but does not disclose grouping N series of packets received on N input paths at N bit-rates into K bit-rate groups ( $K \leq N$ ), each group assigned to one of K wavelengths, and routing the K groups to a destination. However, Chraplyvy discloses assigning WDM wavelengths of

mixed bit-rate WDM signals so that low bit-rate channels with rates under a maximum bit-rate are assigned to WDM wavelengths having poorer SNR past the edges of the pass band, or within the pass band, of the WDM system's optical amplifiers, and where edge regions of the pass band are further subdivided, with the outermost edge regions assigned to the lowest bit-rate signals (figs. 4 and 5 and paragraphs 0019-0022). It would have been obvious to one of ordinary skill in the art at the time of the invention to transmit signals of varyingly lower bit-rates using WDM edge wavelengths or poor-SNR wavelengths in the system of Lee by increasing the functionality of the WDM-to-TDM conversion modules of Lee to process varyingly lower bit-rate signals for transmission using edge wavelengths or poor-SNR wavelengths, in order to enable input signals of different lower bit rates in the collision-avoidance system of Lee, as well as to provide the advantage of increasing capacity and/or transmission over wavelengths with poor SNR.

Regarding claim 10, the combination of Lee and Chraplyvy discloses the method according to claim 9 and wherein each optical packet in said N series of optical packets comprises one of the following: a fixed-length optical packet; and a variable-length optical packet (Lee: fig. 5, elements T and T/n and col. 4, lines 26-60).

Regarding claim 11, the combination of Lee and Chraplyvy discloses the method according to claim 9, and discloses segregating varyingly lower bit-rate signals from higher bit-rate signals for wavelength assignment, but does not explicitly disclose that the bit-rate based wavelength assignment involves comparing bit-rate identifiers, the identifiers derived from analyzing header information, to obtain the difference in bit-rates. However, Lee discloses ATM signals (col. 2, lines 62-65). It would have been obvious to one of ordinary skill in the art at the time of the invention that bit-rate information could be derived for each signal by analyzing the inherent ATM cell headers of the ATM signals taught by Lee.

### ***Double Patenting***

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 12 and 33 are rejected under the judicially created doctrine of double patenting over claims 1 and 17 of U. S. Patent No. 6763191 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in claims 12 and 33 in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

11. Claims 12 and 33 are provisionally rejected under the judicially created doctrine of double patenting over claims 1 and 9 of copending Application No. 09/976243. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter.

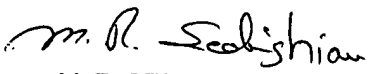
Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

### ***Conclusion***

12. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (800) 786-9199.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://paired.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
M. R. SEDIGHIAN  
PRIMARY EXAMINER